Responsible Control

in a Changing Practice & Technology Environment

Thoughts presented by William Dikis, FAIA to the continuing education seminar on

“Who’s In Charge of Your Integrated Project?”

Sponsored by the Nebraska Board of Engineers and Architects

Responsible Control

Let’s make sure we’re using the same definitions…

Responsible Control

Responsible Control

re·spon·si·ble

1. Liable to be required to give account, as of one's actions or of the **discharge of a duty or trust**.
2. Involving personal accountability or **ability to act without guidance or superior authority**.
3. **Being a** source or **cause**.
4. **Able to make** moral or **rational decisions on one's own** and therefore **answerable for one's behavior**.
5. **Able to be trusted** or depended upon; **reliable**.
6. Based on or **characterized by good judgment** or sound thinking.

The American Heritage® Dictionary of the English Language: Fourth Edition. 2000.

Responsible Control

con·trol (noun)

1. Authority or **ability to manage or direct**.
2. One that controls; a controlling agent, device, or organization.
3. A **restraining** device, measure, or **limit**; a curb.

The American Heritage® Dictionary of the English Language: Fourth Edition. 2000.

Responsible Control

BY THE WAY, DID YOU KNOW…?

Although “direct supervision” and similar terms occur in several state licensing laws, including Nebraska, such terms do NOT appear in NCARB Model Law.

Iowa law tries to have it both ways in its architectural law, requiring “direct supervisory control”.

Responsible Control

In NCARB terminology, "direct supervision" is a concept reserved for use only in the Intern Development Program:

> "Direct supervision" means that degree of supervision by a person overseeing the work of another, where both perform their work in the same office, where personal contact is routine, and whereby the supervisor has both control over and detailed professional knowledge of the work prepared under his/her supervision.

Responsible Control

In today's dramatically evolving and quickly changing practice environment, elimination of the concept of "direct supervision" (i.e. personal contact) as a professional duty of practice makes much sense.

Consider the escalation in use of remote expertise, such as independent contractors, out-sourcing, and off-shore assistance… often impossible to claim Direct Supervision… but never a more important time to exercise **Responsible Control!**

Responsible Control

So, let us suspend the notion of "direct supervision"

– at least for this morning's discussion –

and focus on the implications of

"**Responsible Control**"

Responsible Control

Why is **Responsible Control** important?

Think about the basic premise of registration law:

1. The practices of architecture & engineering **affect public health, safety & welfare** and thus are subject to regulation & control in the public interest.
2. Only persons duly registered may **engage in those practices** or **use those titles.**
3. The process of registration requires (typically) accredited **Education**, monitored and mentored **Experience**, & a valid & rigorous **Examination**.

Responsible Control

4. The practices of architecture & engineering are carefully **defined** to reflect the specific & exclusive nature of the professions, **prohibiting others**, not qualified, from doing those things.
5. The practices result in a **Technical Submission** prepared by the professionals which must be duly **sealed** & signed to indicate **responsibility** of authorship & signify that a professional **standard of care** has been applied to the work.
6. The seal represents an **ethically based** certification that the design professional has **exercised Responsible Control** over the **evolution** of the work.

Responsible Control

7. The process reaches an extremely important milestone when the sealed Technical Submission is presented to the Building Authority for a **building permit.** This is the point at which theoretical design takes the first step in becoming physical design.
8. The permit process provides the **gatekeeper & enforcement functions** of the entire design & documentation process. A public official charged with enforcement accepts the Technical Submission **ONLY** if it is duly sealed, **OR** if a legitimate exception is claimed.

Responsible Control

Therefore…

- Issuance of a building permit presumes a Technical Submission has been prepared under the **Responsible Control** of a licensed design professional.
- The public is protected by the combination of the professional's continuous care and by the scrutiny of the building official.
- Without the duty of professional **Responsible Control**, there is little rationale for **Licensure**.
- Without **Licensure**, the public is not well protected.

Responsible Control

Or…

- To think about this in a different way, imagine licensing without the duty of Responsible Control…
- In a collaborative setting, with many participants with varying qualifications contributing to a design solution…
- How would HSW protection be assured? It would fall mainly on the shoulders of the building official, losing the duality of design professional responsibility.
- Why would licensure then be needed?

Responsible Control

Recent NCARB action to update the definition of Responsible Control was stimulated by the growing use of Building Information Modeling (**BIM**) and the relatively new idea of Integrated Project Delivery (**IPD**)

Responsible Control

Both **BIM** and **IPD** are likely to involve extensive collaboration by many parties… owner, architect, engineer, contractor, subs, materials suppliers, etc.

Responsible Control
in the BIM Environment

BIM implications & questions

1. Steep learning curve for new technology
2. Uncertainty of who and how multiple collaborators may contribute to a BIM
3. Assumption (incorrect) that there is only one “master” BIM model
4. How does architect or engineer act as gatekeeper if others involved?
5. The more collaborators, the more that **responsible control** is critically important.

Responsible Control
in the Integrated Practice Environment

IPD implications & questions

1. Steep learning curve for new processes & relationships
2. Uncertainty of who and how multiple participants collaborate as equals in the IPD process
3. BIM is closely tied to IPD to facilitate collaboration
4. How does architect or engineer act as gatekeeper with other collaborators involved in decisions?
5. Is NCARB Model Law adequate to make clear the duty of design professionals in changing times?

Responsible Control
in the Integrated Practice Environment

Considerations & Concerns

1. The AIA "Integrated Project Delivery Guide" describes decision-making as "unanimously by project team"
2. IPD team roles "assigned on best person basis"
3. "Control of the BIM may transfer from Designer to Constructor at the conclusion of Detailed Design" (old Design Development phase)
4. Lack of clarity of model contracts, case law, & professional liability insurance policy
5. Concern that some construction industry advocates might push for drastic changes in licensure laws

Responsible Control

2009 NCARB IPD Task Force

Considerations

1. Growing collaboration, pressure to improve efficiency in the design & construction process
2. Responsible integration of information prepared by others into project documentation is not only a future consideration, but a current & historical practice
3. IPD could be a threat to HSW & continuing Licensure IF the A/E would no longer provide **Responsible Control**

Responsible Control

2009 NCARB IPD Task Force

Considerations

Business & Legal issues that are not relevant to NCARB Model Law:

1. Professional liability insurance implications
2. Forms of contractual agreement
3. Who by, and how, the BIM is managed
4. Indemnifications

Responsible Control

2009 NCARB IPD Task Force

Conclusions

1. BIM is a Tool; IPD is a process
2. Managing BIM is a business & technological process
3. Managing IPD is a business & legal process which must respect licensing laws
4. Rapidly evolving technology – BIM, “smart” software, interoperability, etc.

Responsible Control

2009 NCARB IPD Task Force

Conclusions

5. **Responsible Control** is fundamental to the concept of professional licensure
6. **Responsible Control** is a mandatory duty of all licensed design professionals, NO MATTER WHAT DELIVERY SYSTEM IS BEING EMPLOYED

Responsible Control

2009 NCARB IPD Task Force

Goals

1. Assure that NCARB Model Law sets an adequate ethical duty for architect to protect public HSW
2. Assure that Model Law is flexible to adapt to continuing change in technology & practice
3. Expect architects' business & legal policies & procedures to adequately embrace the duty
4. Expect courts, model contracts & insurance to conform to licensure laws (not change them)

Responsible Control

2009 NCARB IPD Task Force

NCARB held a Hearing 10/31/08 in Arlington, VA … we convinced some industry leaders to stick their necks out and talk about **Responsible Control** in our changing world

Responsible Control

2009 NCARB IPD Task Force

Hearing Speakers

1. Large Arch Firm: Jim Jonassen, FAIA, CEO - NBBJ, Seattle
2. Small Arch Firm: Forrest Lott, AIA, Lott+Barber, Savannah
3. Contractor: John Tocci, Pres - Tocci Bldg Corp, Woburn, MA
4. Govt: Henry Green, Hon AIA, Pres – NIBS
5. Govt/Owner: Charles Matta, FAIA, Director, Federal Bldgs & Modernizations, GSA, Washington
6. Prof Liability Insurance: Gregg Bundschuh, JD, Ames & Gough Insurance, Atlanta
7. Code Development: Steve Thorsell, AIA, NCARB, ICC, Chicago
8. Construction Attorney: Howard Ashcraft, Esq., Hanson Bridgett, San Francisco

Responsible Control

2009 NCARB IPD Task Force

Hearing Papers

1. "Redefining Responsible Control in Architectural Licensure under IPD and BIM", Phillip Bernstein, FAIA, NCARB, Vice Pres Autodesk AEC Solutions
2. "Considerations on Responsible Control", AIA Integrated Practice Discussion Group [George Miller, FAIA; James Suehiro, AIA; Pamela Touschner, FAIA; Kevin Connolly, AIA; Barbara Milan Price, FAIA; Robert Smith, AIA; Ricardo Aparicio, Esq, AIA; Meghan Kell Cornell, AIA; Elizabeth Stewart, Esq, AIA VP Strategy & Business Development; Markku Allison, AIA, AIA Resource Architect]
3. "New Standard Contracts for Integrated Project Delivery", Kristin Ballobin, 2008 Milton F. Lunch Research Fellow, Victor O. Schinnerer & Company, Inc.

Responsible Control

2009 NCARB IPD Task Force

Critical Questions to Speakers

1. Can both collaboration & architects' accountability be simultaneously achieved?
2. What "best practices" will assure that architects retain sole responsibility for design while allowing collaboration?
3. What "worst practices" should be avoided that would blur responsibility?
4. What are "gray areas" where architects & constructors should take care? Is current BIM technology adequate to identify & record who is responsible?
5. Are current BIM models capable of being archived for continuing future reference for accountability?

Responsible Control

2009 NCARB IPD Task Force

Critical Questions to Speakers

7. Can participants rely on contributions by others without use of disclaimers?
8. Who is best equipped to serve as model manager?
9. Do current smart building code software programs facilitate responsibility, and if so, how?
10. What changes, if any, to NCARB Model Law for architects' responsibility are required?
11. How does need for architect responsibility change, if any, during 1) project start thru construction documentation, 2) pricing thru completion of construction, and 3) after completion?
12. What policies & procedures should be implemented by architects to assure they exercise Responsible Control during collaboration?

Responsible Control

2009 NCARB IPD Task Force

Analysis of Presentations

1. To our surprise, no speaker called for elimination of, or even dramatic change in, **Responsible Control**
2. A few speakers felt current Model Law is adequate
3. Several speakers advocated strengthening Model Law to include duty for integration & coordination, including critical review & acceptance of contributions to technical submissions by non-licensed sources
4. The then-new AIA E202 BIM Protocol Exhibit was praised for bringing clarity to establishing responsibility as a business procedure
5. Appreciation was expressed for the considerable value of early involvement & collaboration by contractors, subcontractors, suppliers & fabricators as "trusted sources"

Responsible Control

2009 NCARB IPD Task Force

Analysis of Presentations

6. Current Model Law was praised for requiring the architect to keep an archival record for 5 years of the procedure for exercising **Responsible Control** when information is prepared by persons not regularly employed in the resident office
7. Accountability recorded by business practices such as authorship, versioning, archiving, federated models, milestone record documents, automated journals & change tracking were recognized as important for compliance & enforcement
8. It was agreed that Model Law should be general as opposed to prescriptive, so as to be flexible for changing technology
9. Construction contract law & professional liability insurance are in their infancy regarding IPD & BIM

Responsible Control

2009 NCARB IPD Task Force

Findings

1. The value & critical need for the duty of **Responsible Control** was confirmed by all presenters as **essential** to protection of public HSW
2. Experienced participants in IPD & BIM agree that **Responsible Control** can & must be included in laws
3. Integration of details & other information from 3rd parties not licensed occurs widely, both currently & in past years
4. The term "incidental" is an appropriate descriptor of the nature of contributions to be permitted by non-licensed persons, denoting a comparatively minor aspect of a technical submission

Responsible Control

2009 NCARB IPD Task Force

Findings

5. Contributions to a technical submission by non-licensed persons must first be subject to review & acceptance, then coordination & integration by the A/E
6. Recording accountability by means of various business policies & procedures is a sensible way to demonstrate meeting the requirement
7. It is the A/Es' duty to maintain **Responsible Control** over the entire design & documentation, including model management, whether performed first hand or delegated
8. It is not appropriate (or possible) to limit **Responsible Control** only to HSW aspects of a technical submission

Responsible Control

2009 NCARB IPD Task Force

Findings

9. The A/E is obligated to exercise **Responsible Control** during design & documentation at least until a building permit is issued; thereafter the A/E must exercise **Responsible Control** over changes to the documentation and the project until construction is complete

10. Non-licensed persons, including remote outsourcing, may contribute to the BIM when the A/E has policies & procedures in place to properly review, accept and integrate the information, thus providing **Responsible Control**

Responsible Control

2008 NCARB Model Law

Concerning Responsible Control:

Section 1 – Definitions

"Responsible control."
That amount of control over and detailed professional knowledge of the content of technical submissions during their preparation as is ordinarily exercised by registered architects applying the required professional standard of care. Reviewing, or reviewing and correcting, technical submissions after they have been prepared by others does not constitute the exercise of responsible control because the reviewer has neither control over

Section 6 – Seal

Every registered architect shall have a seal of a design authorized by the Board by regulation. All technical submissions, which are (a) required by public authorities for building permits or regulatory approvals, or (b) are intended for construction purposes, including all addenda and other changes to such submissions, shall be sealed with the impression of his/her seal and the signature of the architect. The signature and seal shall mean that the architect was in responsible control over the content of

Section 11 - Exceptions

Nothing in this chapter shall be construed to prevent:

5. The preparation of technical submissions or the administration of construction contracts by persons acting under the responsible control of a registered architect.

Responsible Control

2008 NCARB Model Law

SECTION 1 – DEFINITIONS

"Responsible control."

That amount of control over and detailed professional knowledge of the content of technical submissions during their preparation as is ordinarily exercised by registered architects applying the required professional standard of care.

Reviewing, or reviewing and correcting, technical submissions after they have been prepared by others does not constitute the exercise of responsible control because the reviewer has neither control over nor detailed professional knowledge of the content of such submissions throughout their preparation.

Responsible Control

2008 NCARB Model Law

SECTION 6 – SEAL

The signature and seal shall mean that the architect was in **responsible control** over the content of such technical submissions during their preparation and has applied the required professional standard of care.

Responsible Control

2008 NCARB Model Law

SECTION 11 – EXCEPTIONS

Nothing in this chapter shall be construed to prevent:

2. The preparation of submissions to architects by the manufacturer, supplier, installer, or others of any materials, components, or equipment incidental to the architect's design of the entire project that describe or illustrate the use of such items.

5. The preparation of technical submissions or the administration of construction contracts by persons acting under the **responsible control** of a registered architect.

NCARB Resolution 2009-01

2009 *Model Law* - Amendment to Section 1

Clarifying the Definition of "Responsible Control"

In the 2009 Annual Meeting, Resolution 2009-01 passed, thus modifying the definition of **Responsible Control** in Section 1 and, for consistency, the Exceptions in Section 11. The following slides illustrate the changes.

("Legislative Guidelines and Model Law and Model Regulations" is available at no cost at www.ncarb.org/en/Publications.aspx)

NCARB Resolution 2009-01
2009 *Model Law* - Amendment to Section 1
Clarifying the Definition of "Responsible Control"

"**Responsible control**".

That amount of control over and detailed professional knowledge of the content of technical submissions during their preparation as is ordinarily exercised by a registered architects applying the required professional standard of care, including but not limited to an architect's integration of information from manufacturers, suppliers, installers, the architect's consultants, owners, contractors or other sources the Architect reasonably trusts that is incidental to and intended to be incorporated into the architect's technical submissions if the architect has coordinated and reviewed such information.

NCARB Resolution 2009-01

2009 *Model Law* - Amendment to Section 1

Clarifying the Definition of "Responsible Control"

"**Responsible control**".

Other review~~ing~~, or review~~ing~~ and correction ~~correcting~~, of technical submissions after they have been prepared by others does not constitute the exercise of responsible control because the reviewer has neither control over nor detailed professional knowledge of the content of such submissions throughout their preparation.

NCARB Resolution 2009-01
2009 *Model Law* Amendment to Section 11
Clarifying the intent of Exceptions

Exceptions

[Nothing in this chapter shall be construed to prevent:]

"2. The preparation of submissions to an architect~~s~~ by ~~the~~ manufacturers, suppliers, installers, the architect's consultants, owners, contractors, or others of any materials, components, ~~or~~ equipment, or other information incidental to the architect's design of the entire project that describe or illustrate the use of such ~~items~~ submissions."

.

NCARB Resolution 2009-01
Rationale

- The definition as amended is adequate to facilitate, with reasonable future flexibility, the emerging use of BIM & IPD
- Architects have historically incorporated information from trusted sources into plans & specs; BIM & IPD are evolutionary changes to this practice
- Greater involvement of constructors in development of design promotes efficiency in design & construction
- Data models authored by various participants are appropriately separate & distinct, linked to provide a federated model, thus enhancing responsible control